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Analysis of the microbiota changes in the intensive care unit with routine cleaning

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Hospital-associated infections in intensive care units (ICUs) can be difficult to treat and cause high mortality rates. Organisms causing these infections could be present at supplies and equipment around the patient. The disinfection and sterilization of these surfaces near the patient are generally done by concurrent cleaning. Culture-dependent methods are used to study bacterial populations

in the routine analysis to evaluate cleaning efficiency. However, these methods can underrate the microbiome diversity present in hospital areas. Therefore, with the aim of investigating the efficiency of cleaning within a referral hospital's ICU, a 16S rRNA metagenomic sequencing approach was used to profile bacterial surface communities before and after concurrent cleaning with polyhexamethylene biguanide (PHMB) solution. The results showed that, although some bacterial populations decreased, potential human pathogens were still present after cleaning the surfaces, demonstrating that these ICU surfaces represent a potential vector for spreading

pathogens. These results highlight the importance of evaluating routine cleaning as a mean of managing the microbial ecosystem of ICUs and using deep-sequencing tools for microbial surveillance and hygienic testing in hospital environments.

Biography

Lucas F Ribeiro has completed his PhD at the age of 30 years from the University of Sao Paulo and Postdoctoral studies from Johns Hopkins University. Currently, he works as a Postdoctoral Fellow at the University of Sao Paulo. He has published 20 papers in reputed journals and has been serving as a guest editorial board member of repute.

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